

Hazeltine

Corporation

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

April 1, 1993
Serial XXX-93-GC0364

Office of the Secretary
Federal Communications Commission
Washington, D.C. 20554

Subject: ET Docket No. 92-298
Notice of Proposed Rule Making Regarding Adoption
of Standard For AM Stereophonic Broadcasting

Sir:

In response to the Commission's Notice of Proposed Rule Making, released January 6, 1993 in the subject Docket, Hazeltine Corporation submits the enclosed Comments for the Commission's consideration.

Very truly yours,



Edward A. Onders
General Counsel

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

APR - 5 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

)
Amendment of the Commission's
Rules to Establish a Single AM
Radio Stereophonic Transmitting
Equipment Standard)

ET Docket No. 92-298

COMMENTS OF HAZELTINE CORPORATION
IN RESPONSE TO NOTICE OF PROPOSED RULE MAKING
REGARDING ADOPTION OF STANDARD FOR AM STEREO BROADCASTING

1.0 Background

Hazeltine Corporation (hereinafter "Hazeltine") is a long-time proponent of the Kahn/Hazeltine Independent Sideband (ISB) AM Stereo System (hereinafter the "Kahn/Hazeltine System" or "K/H System"), having participated in the proceeding which resulted in the Commission's issuing its Report and Order in Docket No. 21313 in March 1982 adopting a marketplace approach to AM stereo system selection. Hazeltine submits these comments in opposition to the Commission's now proposed adoption of the competing Motorola C-QUAM AM Stereo System (hereinafter the "C-QUAM System") as the national standard for AM stereo radio broadcasting.

2.0 Statutory Requirements

In its NOTICE OF PROPOSED RULE MAKING, adopted December 10, 1992 and released January 6, 1993 in this Docket No. 92-298, (hereinafter the "Notice"), the Commission proposes to adopt the C-QUAM System as the national standard for AM radio broadcasting in order to comply with the requirements of Section 214 of the Telecommunications Authorization Act of 1992, P.L. No. 102-538, (hereinafter the "1992 Act"). Since the 1992 Act does not mandate adoption of the C-QUAM System, the Commission must justify its

selection of the C-QUAM System over the competing K/H System, or any other AM stereo system, as being required by "...public convenience, interest or necessity..." (47 U.S.C. 303) and, therefore, a proper exercise of its statutory powers and duties.

Hazeltine submits that, for the reasons set forth below, the Notice clearly establishes that the action which the Commission proposes to take fails to meet the requirements of 47 U.S.C. 303 and, therefore, is improper, discriminatory and would be subject to

- (i) "...users of the existing 24 million C-Quam receivers would no longer be able to enjoy AM stereo reception through that equipment." and
- (ii) "...existing broadcasters would forfeit their investments in C-Quam transmission equipment."
(Notice, para. 6)
- (d) "...many AM broadcasters are struggling financially and may not be able to afford replacement stereo transmission equipment." (Notice, para. 6)
- (e) "Selection of an alternative stereo standard thus could conceivably result in discontinuance of the existing stereo service with no replacement." (Notice, para.6)

4.0 Violation of Commission Powers and Duties

Hazeltine respectfully submits that the bases asserted by the Commission (see 3.0 above) are unsupported and insupportable and, therefore, the Commission's proposed selection of the C-QUAM System solely on these bases would represent a violation of the Commission's statutory powers and duties as being arbitrary and capricious action. Thus, any attempt by the Commission to select the C-QUAM System solely on the bases stated in the Notice would be subject to challenge and reversal on appeal in the courts. Each of the Commission's asserted bases for its selection of the C-QUAM System is addressed separately below.

5.0 Preference

5.1 In the Notice, the Commission makes the bare and sweeping assertion that broadcasters, manufacturers and radio purchasers have demonstrated strong preference for the C-QUAM System. However, the Commission fails to cite any supporting empirical data

for its assertion. The simple fact that less than 12% of all AM broadcasters acquired C-QUAM System transmission equipment and that approximately 24 million C-QUAM System receivers have been sold is not evidence of a "strong preference".

5.2 For one to exhibit a "preference", one must be given the opportunity to voluntarily choose, based on informed judgment and perceived benefit, between at least two available alternatives. That has not been the case in the AM stereo transmission equipment and AM stereo receiver markets in the United States.

5.3 While it is true that AM broadcasters have, since March 1982, had the opportunity to choose between C-QUAM and K/H System AM stereo transmission equipment, in fact the only broadcasters who have truly demonstrated a preference are those who chose the K/H System, since they were doing so despite the unavailability of AM stereo receivers for this system. The Commission cites no evidence indicating that those AM broadcasters who acquired C-QUAM System transmission equipment were, in fact, expressing a preference. It is more likely that they were pursuing what they perceived to be the only viable system, due to the unavailability of AM stereo receivers for the K/H System. Thus, they believed they had no choice and, therefore, could not express a preference.

5.4 Similarly, manufacturers of AM receivers had no choice and, therefore, could not express a preference. To manufacture AM stereo receivers, integrated circuits (ICs) are required which perform the AM stereo decoding function. For a short time after the Commission's 1982 marketplace decision regarding AM stereo, AM stereo decoder ICs were available for both the C-QUAM System and for multi-system AM stereo receivers, and during this brief period manufacturers did have a choice and could, and did, express a preference. General Motors chose to manufacture AM stereo receivers for the C-QUAM System, using Motorola's AM stereo decoder IC, and Sony chose to manufacture multi-system AM stereo receivers,

using its own AM stereo decoder IC. However, following threats by Motorola against Sony for patent infringement, Sony discontinued sales of its AM stereo receivers and its multi-system ICs in the U.S. market. Thereafter, manufacturers of AM receivers had no choice, since only Motorola AM stereo decoder IC were, and still are, available for the C-QUAM System. Thus, for some years now AM receiver manufacturers could not, and still cannot, express a preference between the C-QUAM and K/H Systems.

5.5 Likewise, during the brief time when multi-system receivers were available in the U.S. market, purchasers of AM stereo receivers had a choice and, therefore, could express a preference. But once multi-system receivers were withdrawn from the market, no choice was left and, therefore, no preference could be expressed by radio purchasers. Furthermore, the majority of the 24 million C-QUAM System AM stereo receivers cited by the Commission as evidence of a preference are "original equipment" radios installed in vehicles at the factory or by vehicle dealers. That is, either (a) they come as standard equipment in automobiles and trucks, so that the purchaser again has no opportunity to choose what type AM stereo receiver he gets in his vehicle when he purchases the vehicle, or (b) the AM stereo feature comes as an integral part of a radio upgrade package, so that the purchaser gets the AM stereo feature automatically, without opportunity for choice. Therefore, in either case the purchaser has not expressed a preference for the C-QUAM System because he had no choice.

5.6 Thus, the Commission's assertion that broadcasters, manufacturers and radio purchasers have expressed a "strong preference" for the C-QUAM System is unsupported and, therefore, its selection of the C-QUAM System on this basis would be arbitrary and capricious and in violation of the Commission's statutory authority.

6.0 Uncertainty

6.1 In the Notice, the Commission asserts that those broadcasters who have not implemented AM stereo broadcasting (which is the vast majority, or more than 85% of all AM broadcasters) have not done so because there is uncertainty as to which AM stereo technology they should employ. The Commission further asserts that by eliminating this uncertainty, through adoption of the C-QUAM System as the official national standard, expansion of AM stereo broadcasting will be promoted and the quality of the AM service will be improved. Here again, the Commission provides no current evidence supporting its bare assertions.

6.2 The Commission's assertion that there is uncertainty is unsupported by any cited current evidence and is incredible, given that the broadcasters have had more than 10 years to evaluate each AM stereo system's technology in actual over-the-air operation and reach a conclusion as to which system technology will best meet their needs and given the Commission's own conclusion that a de facto standard already exists. But assuming there is uncertainty, which we do not concede, adopting the C-QUAM System will not eliminate the uncertainty unless and until the Commission's action becomes final following a long appeal process, since the Commission's proposed action is subject to challenge in the courts as noted in 2.0 and 5.0 above.

6.3 Assuming the Commission's selection of the C-QUAM System is eventually and finally upheld in the courts, the Commission has cited no evidence supporting its assertion that this will promote the expansion of AM stereo broadcasting and result in an attendant improvement in the AM service. More particularly, the Commission has cited no current evidence that a significant number of additional AM broadcasters desire to implement stereo broadcasting or that any are deferring doing so due to uncertainty or pending the outcome of this Rule Making Proceeding.

6.4 Nor has the Commission cited any evidence that implementing the C-QUAM System, as opposed to the K/H System, will result in an improvement in the AM service. The Commission here seems to be confusing the inherent improvement in AM broadcast quality that usually accompanies the implementation of any stereo system, not directly attributable to the stereo system's characteristics, but due to accompanying improvements made in other elements of the broadcaster's facilities, such as studio equipment, program source material and transmitter retuning. In fact, ample technical evidence has been submitted to the Commission in the past identifying serious defects in the C-QUAM System.

6.5 The existence or nonexistence of uncertainty as to which AM stereo technology broadcasters should use does not explain why more broadcasters have not chosen to implement the C-QUAM System to date, keeping in mind that less than 15% of the total number of AM broadcasters have implemented stereo after more than 10 years of availability of this feature. Since broadcasters are free today to choose and implement the C-QUAM System and their stereo broadcasts could be heard on the approximately 24 million C-QUAM AM stereo receivers the Commission reports to be currently in use by radio listeners, why have so few AM broadcasters implemented the C-QUAM System after more than 10 years of active marketing of this System by Motorola, its licensees and other proponents. In the public's interest, the Commission should actively seek the answer to this question before deciding which AM stereo system to adopt as the national standard. Broadcasters have had more than 10 years to evaluate each system's technology in actual operation and reach a conclusion as to which system technology is preferable, and the Commission and the public would benefit from evaluating this data and experience.

7.0 Set Back

The Commission asserts that selection of any alternative to the C-QUAM System would "set back the clock on the implementation of AM stereo service", and that this would be to the substantial detriment of the public and broadcasters. As support for its assertions, the Commission argues that:

- (a) Users of the existing 24 million C-QUAM receivers would no longer be able to enjoy AM stereo reception through their equipment.

However, the Commission's argument is based on the false premise that these users (a) know that they have receivers capable of receiving C-QUAM System stereo broadcasts, and (b) "enjoy" the resulting stereo reception. As noted in 5.4 above, a majority of these existing AM Stereo receivers were factory or dealer installed radios which simply came with the vehicles being purchased, in most, if not all cases, unknown to the purchaser. Evidence exists that the fact these radios are capable of receiving AM stereo broadcasts, and C-QUAM System broadcasts in particular, is not prominently made known to the vehicle purchaser. In some cases it is merely noted in passing in the vehicle's owner's manual. Furthermore, evidence exists which indicates that the stereo decoding circuitry of these receivers frequently switches the receiver to monaural operation under even slightly adverse signal reception conditions, raising the question as to whether the users of these radios are truly able to "enjoy AM stereo reception", as the Commission alleges they do.

Finally, and more important, however, is the fact that technology exists for simply adapting these existing C-QUAM System receivers so that they can receive in stereo. It

rendered obsolete and useless if the Commission selected the K/H System as the national standard for AM stereo broadcasting.

- (b) Existing broadcasters would forfeit their investments in C-QUAM transmission equipment.

The Commission cites no evidence supporting this assertion. In fact, the assertion may be false, depending on whether C-QUAM System transmission equipment can be adapted to an alternative system and on the trade-in policy of alternative system transmission equipment suppliers. But even assuming it is true, the cost of the C-QUAM System transmission equipment (usually only an exciter and a companion monitor) which would not be usable in implementing an alternative system is only a fraction of the total investment an AM broadcaster has made in implementing stereo (the majority is in stereo studio equipment, programming and studio-to-transmitter links). Thus, contrary to the Commission's assertion, it is unlikely that an existing stereo equipped AM broadcaster would discontinue stereo broadcasting altogether, rather than simply purchase a new exciter compatible with the alternative stereo system.

- (c) The legislative intent of the Act is to advance AM stereo service.

Contrary to the Commission's assertion, the legislative

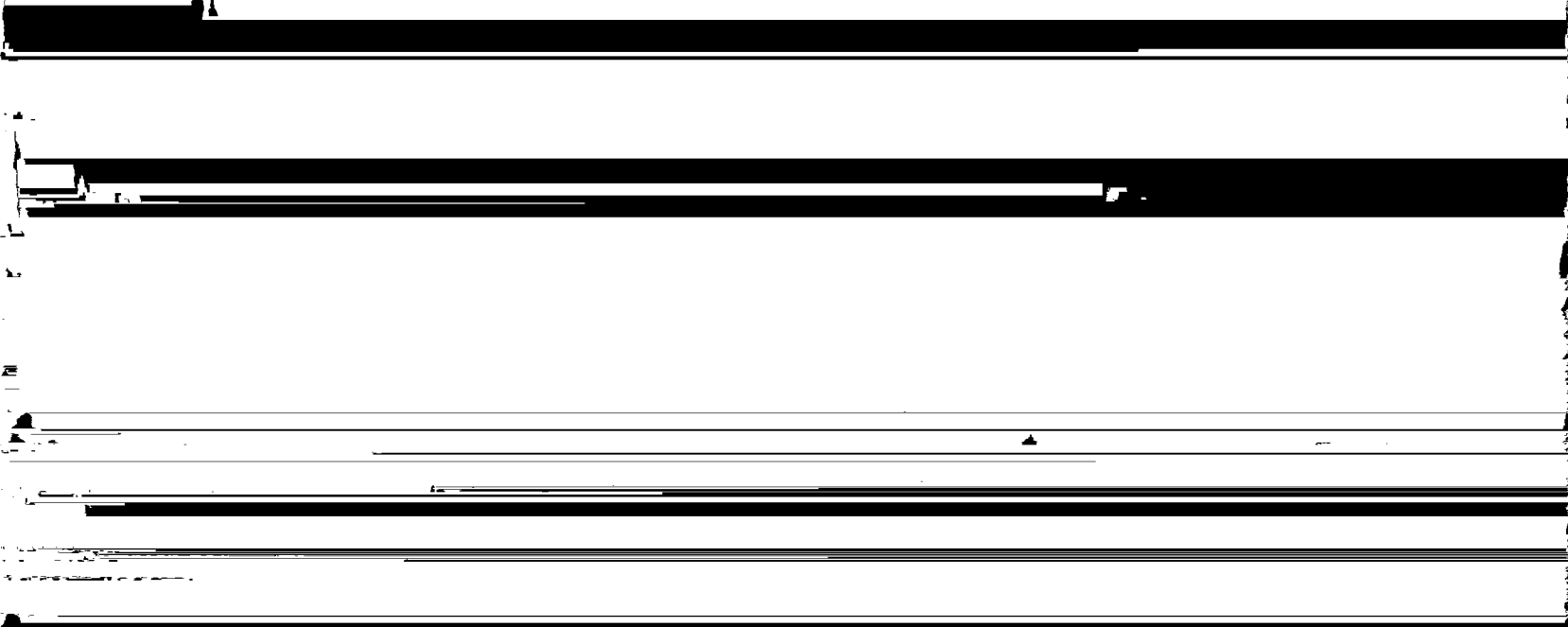
achieve its true intent, which was to stimulate the economic health of AM broadcasters and thereby halt further decline of the AM broadcasting service.

8.0 Financial Hardship

The Commission assumes, without citing any supporting evidence, that those AM broadcasters who are currently equipped with C-QUAM System transmission equipment are among those who are struggling financially, and then asserts that they may not be able to afford replacement stereo transmission equipment. In the absence of evidence to the contrary, it is more likely that the broadcasters who have implemented AM stereo are those who are financially sound. Otherwise, how could they afford to make the significant investment required to implement AM stereo broadcasting in the first place. However, if they are now financially unsound, it raises the interesting question as to whether broadcasting in C-QUAM System stereo resulted in or at least contributed to their unprofitable condition.

9.0 Discontinuance

As noted in 8.0 above, the Commission's assertion regarding the financial soundness of broadcasters who have purchased C-QUAM System transmission equipment is conjectural and as such does not support the Commission's conclusion that selection of an



We submit that the determining factor will be the availability of K/H System AM stereo receivers, and that if the Commission were to select the technically superior K/H System, receiver manufacturers would respond by designing and manufacturing AM stereo receivers for this system.

It is also important to note that for AM stereo receivers (and that is a key

not clear from the Notice why the Commission has chosen the C-QUAM System. Although the Notice gives several bases for the Commission's choice, as shown above, none of the bases has clear validity. In fact, it appears the Commission has simply tired of dealing with the AM stereo issue and decided, in light of Congress' action, to take the easy way out, accept the declarations of C-QUAM System proponents that a de facto standard has been reached in the marketplace, and merely rubber stamp this "selection".

Instead, the Commission should truly act in the best interests of the public and the broadcasters by determining which AM stereo technology will fulfill the uniformly expressed desire to stimulate and improve the quality of the existing AM service in the near term as well as into the future. The Commission should not abrogate its responsibility to the American public and to the AM broadcasters by

of the competing technologies rather than the mere imprimatur of a perceived "de facto standard", since the latter reflects the results of marketing prowess and not technical superiority.

As difficult as it may be to accomplish in the short time remaining under the time constraint imposed on the Commission by the 1992 Act, nevertheless, the Commission should promptly undertake an expedited technical evaluation of the C-QUAM and K/H Systems and base its selection of an AM stereo standard solely on the results. Since AM broadcasters have had more than a decade of practical on-the-air experience in using these two systems, the Commission could quickly gather the empirical data necessary to support its evaluation.

Accordingly, we recommend that the Commission immediately terminate this flawed proceeding and promptly issue a new or Further Notice of Proposed Rule Making requesting technical data and comments from industry on an expedited basis concerning the actual operating characteristics of the C-QUAM and K/H Systems as demonstrated by broadcasters' and receiver manufacturers' experience to date with these systems. With the resulting data in hand, the Commission then should be fully equipped to make a sound and well reasoned selection of an AM stereo standard which will ensure the long-term viability of the AM service in the United States.

Respectfully submitted,
HAZELTINE CORPORATION

A handwritten signature in black ink, appearing to read "EAOnders", written in a cursive style.

Edward A. Onders
General Counsel